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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/938,641	08/27/2001	Achim Marx	211226US0X	2808
22850	7590	09/16/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			KERR, KATHLEEN M	
		ART UNIT	PAPER NUMBER	
		1652		

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/938,641	MARX ET AL.	
	Examiner	Art Unit	
	Kathleen M Kerr	1652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 June 2004.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,3-6,10-17,19-22,26-29 and 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 1,3-6,10-12,19-22,26 and 29 is/are allowed.
- 6) Claim(s) 13-17,27,28 and 39 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: Alignment

DETAILED ACTION

Application Status

1. In response to the previous Office action, a non-Final rejection (mailed on March 30, 2004), Applicants filed an amendment and response received on June 30, 2004. Said amendment cancelled Claims 7-9, 23-25, and 30-38, amended Claims 12-14, 16, 17, 21, 27, and 28, and added new Claim 39. Thus, Claims 1, 3-6, 10-17, 19-22, 26-29, and 39 are pending in the instant Office action and will examined herein.

Priority

2. As previously noted, the instant application is granted the benefit of U.S. Provisional Application 60/279,415 filed on March 29, 2001 and foreign applications 10042052.4 and 10110053.1 filed in Germany on August 26, 2000 and March 2, 2001, respectively.

Certified translations of the foreign applications have been received.

Information Disclosure Statement

3. The information disclosure statement filed on June 16, 2004, citing related applications, has been reviewed.

Withdrawn – Objections to the Claims

4. Previous objection to Claim 12 under 37 C.F.R. § 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim is withdrawn by virtue of Applicant's amendment.

5. Previous objection to Claims 21 and 27-28 for using an improper genus/species name is withdrawn by virtue of Applicant's amendment.

Withdrawn - Claim Rejections - 35 U.S.C. § 112

6. Previous rejection of Claim 16 under 35 U.S.C. § 112, second paragraph, as being indefinite for the inclusion of fragments of the complement of SEQ ID NO:1 is withdrawn by virtue of Applicant's amendment deleting said fragments.
7. Previous rejection of Claim 16 under 35 U.S.C. § 112, first paragraph, new matter, is withdrawn by virtue of the Examiner's reconsideration. On pages 3-4 of the translation of priority document 10110053.1 (filed March 2, 2001 in Germany), support is found for the instant claim. Said priority document is expressly incorporated by reference and, thus, can support the amendment to the disclosure.
8. Previous rejection of Claims 27-28 under 35 U.S.C. § 112, first paragraph, scope of enablement, because the specification, while being enabling for overexpressing SEQ ID NO:1 by transforming a host cell with a vector comprising SEQ ID NO:1 and a promoter wherein the promoter is responsible for the overexpression, does not reasonably provide enablement for overexpressing SEQ ID NO:1 by means otherwise mentioned in the specification is withdrawn by virtue of Applicant's amendment limiting the claims to means of overexpression enabled by the art.
9. Previous rejection of Claim 29 under 35 U.S.C. § 112, first paragraph, enabling deposit, is withdrawn by virtue of Applicant's amendment to the specification to fully describe the deposit as well as Applicant's previous statement of public availability of the deposit (see Remarks filed on January 6, 2004).

Maintained - Claim Rejections - 35 U.S.C. § 112

10. Previous rejection of Claims 13-15, 17, and 27 under 35 U.S.C. § 112, first paragraph, scope of enablement, because the specification, while being enabling for polynucleotides that encode SEQ ID NO:2, does not reasonably provide enablement for polynucleotides structurally related to SEQ ID NO:1, is maintained. Applicant's arguments have been fully considered but are not deemed persuasive for the following reasons.

Applicant argues that the prior art of record (Kullik *et al.* (2 references in J. Bacteriol. (1995)) identify the requisite structural features of OxyR transcriptional regulator activity such that claims as broad as 90% identical to SEQ ID NO:1 are fully enabled; the Examiner disagrees. The two Kullik *et al.* references describe mutational analysis of a single OxyR protein from *E. coli* leading to indication of 14 “important” residues on the *E. coli* OxyR. Firstly, OxyR from *E. coli* is only 37% identical (54% similar) to the OxyR of *C. glutamicum* disclosed in the instant application. Secondly, only 9 of the noted 14 residues in *E. coli* are also conserved in *C. glutamicum*. Lastly, only 4 of these residues are crucial to activity and/or DNA binding because the data on producing constitutively active mutants does not help enable critical residues for activity (for it is only in the mutation of these residues that activity is found). Thus, the art contains minimal information about OxyR proteins as a genus wherein the data would be applicable to any related protein. Thus, the breadth of the instant claims is not enabled to the full extent of its scope by the specification, even in combination with the prior art.

NEW ISSUES

Claim Rejections - 35 U.S.C. § 112

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 28 and 39 are rejected under 35 U.S.C. § 112, first paragraph, scope of enablement, because the specification, while being enabling for *Corynebacterium* comprising SEQ ID NO:1 or a sequence that encodes SEQ ID NO:2, does not reasonably provide enablement for *Corynebacterium* comprising a sequence with as little as 90% sequence identity to SEQ ID NO:1. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

The instant rejection is set forth because that dependent claims 28 and 39 do not limit what the overexpressed polynucleotide must be but merely further include a particular polynucleotide. This rejection is maintained above for Claims 13-15, 17, and 27. Express limitation that the overexpressed polynucleotide is SEQ ID NO:1 (or a sequence encoding SEQ ID NO:2) is required to limit the claims as it would seem they are intended.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 15 and 16 are rejected under 35 U.S.C. § 102(e) as being anticipated by Nakagawa *et al.* (USPAP 20020197605). The instant claims are drawn to a polynucleotide at least 99% identical to SEQ ID NO:1 and polynucleotides consisting of SEQ ID NO:1 from 491-1471.

Nakagawa *et al.* teach SEQ ID NO:1, a 3,339,400 base pair sequence that encompasses the genome of *C. glutamicum*. A portion of this sequence (2,028,687-2,030,361) is 100% identical to Applicant's SEQ ID NO:1 (see attached alignment). Nakagawa *et al.* also teach SEQ ID NO:2114, a 981 base pair sequence that is exactly Applicant's SEQ ID NO:1 from 491-1471 (see attached alignment).

The Examiner notes that the instant claims are granted priority to DE 10110053.1 filed on March 2, 2001 as an earliest effective filing date; this document contains the first disclosure of 99% identical to SEQ ID NO:1 and polynucleotides consisting of 25 consecutive nucleotides.

Summary of Pending Issues

13. The following is a summary of the issues pending in the instant Office action:
- a) Claims 13-15, 17, 27, 28, and 39 stand rejected under 35 U.S.C. § 112, first paragraph, scope of enablement (breadth of structure/function).
 - b) Claims 15 and 16 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Nakagawa *et al.* (USPAP 20020197605).

Conclusion

14. Claims 1, 3-6, 10-12, 19-22, 26, and 29 are allowed. Claims 13-17, 27, 28, and 39 are not allowed for the reasons identified in the numbered sections of this Office action. Applicants must respond to the objections/rejections in each of the numbered sections in this Office action to be fully responsive in prosecution.

The instant Office action is **NON-FINAL** based on the new grounds of rejection set forth herein.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen M Kerr whose telephone number is (571) 272-0931. The examiner can normally be reached on Monday through Friday, from 9:00am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathupura Achutamurthy can be reached on (571) 272-0928. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kathleen M Kerr
Primary Examiner
Art Unit 1652

September 13, 2004

ALIGNMENT to Applicant

; Sequence 1, Application US/09738626
; Publication No. US20020197605A1
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWA, SATOSHI
; APPLICANT: MIZOGUCHI, HIROSHI
; APPLICANT: ANDO, SEIKO
; APPLICANT: HAYASHI, MIKIRO
; APPLICANT: OCHIAI, KEIKO
; APPLICANT: YOKOI, HARUHIKO
; APPLICANT: TATEISHI, NAOKO
; APPLICANT: SENO, AKIHIRO
; APPLICANT: IKEDA, MASATO
; APPLICANT: OZAKI, AKIO
; TITLE OF INVENTION: NOVEL POLYNUCLEOTIDES
; FILE REFERENCE: 249-125
; CURRENT APPLICATION NUMBER: US/09/738,626
; CURRENT FILING DATE: 2000-12-18
; PRIOR APPLICATION NUMBER: JP 99/377484
; PRIOR FILING DATE: 1999-12-16
; PRIOR APPLICATION NUMBER: JP 00/159162
; PRIOR FILING DATE: 2000-04-07
; PRIOR APPLICATION NUMBER: JP 00/280988
; PRIOR FILING DATE: 2000-08-03
; NUMBER OF SEQ ID NOS: 7059
; SOFTWARE: PatentIn ver. 3.0
; SEQ ID NO 1
; LENGTH: 3309400
; TYPE: DNA
; ORGANISM: Corynebacterium glutamicum
US-09-738-626-1

Query Match 100.0%; Score 1675; DB 10; Length 3309400;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 1675; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 GCCAACCGCAGGGCATTACCATCATGGTGCACAGCCATGTTCCGCCCTGTGGAGCTA 60
Db 2028687 GCCAACCGCAGGGCATTACCATCATGGTGCACAGCCATGTTCCGCCCTGTGGAGCTA 2028746

Qy 61 TTTGCTTATGAAAAGGAAGATCAGCTTAGTCAGATGACTGAATACTGGATGAGGCTCCT 120
Db 2028747 TTTGCTTATGAAAAGGAAGATCAGCTTAGTCAGATGACTGAATACTGGATGAGGCTCCT 2028806

Qy 121 GATTTCGGTGCTGCGATGGATCGTACTTTGATGAATATGCGGATCTTGATACCGGCCG 180
Db 2028807 GATTTCGGTGCTGCGATGGATCGTACTTTGATGAATATGCGGATCTTGATACCGGCCG 2028866

Qy 181 GCAGCTCGTGGACCAGAGTTCTCAAGGTAGAGCACACGGGAAGAACATGAGGTCG 240
Db 2028867 GCAGCTCGTGGACCAGAGTTCTCAAGGTAGAGCACACGGGAAGAACATGAGGTCG 2028926

Qy 241 CAGGTGGTGAAGGATCCAGAAGGTGATAATTCCCTCGCGTTGGATGCCACATTGATCTT 300
Db 2028927 CAGGTGGTGAAGGATCCAGAAGGTGATAATTCCCTCGCGTTGGATGCCACATTGATCTT 2028986

Qy 301 GATGCCCTGATGATGCAGGTGAGGTGCGTTGGATCGCTGCGATTGACCACAACTAG 360
Db 2028987 GATGCCCTGATGATGCAGGTGAGGTGCGTTGGATCGCTGCGATTGACCACAACTAG 2029046

Qy 361 GGGTTTGCCTCGAAAAGCAAGCACGCCCTGGTGCCTGATTGAGCGGTTTACCTATGGCG 420
Db 2029047 GGGTTTGCCTCGAAAAGCAAGCACGCCCTGGTGCCTGATTGAGCGGTTTACCTATGGCG 2029106

Qy 421 CTTTGCCTCGTCAAACGTCCCAGCGATTCATTATTATTCGTGCATTACCGTTAT 480
Db 2029107 CTTTGCCTCGTCAAACGTCCCAGCGATTCATTATTATTCGTGCATTACCGTTAT 2029166

Qy 481 AGTTATAGGCATGAGCAATAAAGAGTACCGGCCACACTGCCAGCTCGCACCTTGT 540
Db 2029167 AGTTATAGGCATGAGCAATAAAGAGTACCGGCCACACTGCCAGCTCGCACCTTGT 2029226

Qy 541 CACCATCGCAGAATGCAAGCACTTGGTACTGCTGCCACCAAGCTGTCATTTCGCAGCC 600
Db 2029227 CACCATCGCAGAATGCAAGCACTTGGTACTGCTGCCACCAAGCTGTCATTTCGCAGCC 2029286

Qy 601 ATCCCTCTCCCAGGCACTTGTCGATTAGAAACAGGCCTGGGAGTTCAGCTGATTGAACG 660
Db 2029287 ATCCCTCTCCCAGGCACTTGTCGATTAGAAACAGGCCTGGGAGTTCAGCTGATTGAACG 2029346

Qy 661 CTCCACCCGCAAGGTATTGTCACCCAGCGGGGAGAAGTTGCTGCCATTGCCAAATC 720
Db 2029347 CTCCACCCGCAAGGTATTGTCACCCAGCGGGGAGAAGTTGCTGCCATTGCCAAATC 2029406

Qy 721 CACCCATTGACGCCGGAGCTTCTCCACGCCAAGGGGCCAACGGTCGCTCAC 780
Db 2029407 CACCCATTGACGCCGGAGCTTCTCCACGCCAAGGGGCCAACGGTCGCTCAC 2029466

Qy 781 TGGACCGTTGACCGTAGGCATCATCCCCACGGCGCTCTTACATTTGCCGTCAATGCT 840
Db 2029467 TGGACCGTTGACCGTAGGCATCATCCCCACGGCGCTCTTACATTTGCCGTCAATGCT 2029526

Qy 841 GTCCATCGTGGATGAAGAATATCCAGATCTGGAACCTCACATCGTGAGGACCAAACCAA 900
Db 2029527 GTCCATCGTGGATGAAGAATATCCAGATCTGGAACCTCACATCGTGAGGACCAAACCAA 2029586

Qy 901 GCATCTCTCGCGTTGCTGCGCACGGCGCATCGACGTCGCCATGATGCCCTGCCTTC 960
Db 2029587 GCATCTCTCGCGTTGCTGCGCACGGCGCATCGACGTCGCCATGATGCCCTGCCTTC 2029646

Qy 961 TGAGGCACCAGGCATGAAGGAAATCCCCCTCTACGACGAAGACTTATCGTCGTTACAGC 1020
Db 2029647 TGAGGCACCAGGCATGAAGGAAATCCCCCTCTACGACGAAGACTTATCGTCGTTACAGC 2029706

Qy 1021 TAGCGATCACCCCTCGCCGGCGCAAGACTTAGAACTATCCGCCCTAGAAGACCTCGA 1080
Db 2029707 TAGCGATCACCCCTCGCCGGCGCAAGACTTAGAACTATCCGCCCTAGAAGACCTCGA 2029766

Qy 1081 TCTGCTGCTCTCGACGGACACTGCCCTCACGCCAAATTGGACCTGTGCCCG 1140
Db 2029767 TCTGCTGCTCTCGACGGACACTGCCCTCACGCCAAATTGGACCTGTGCCCG 2029826

Qy 1141 CGGAGACATCAACCCATTAGCTCCACTACTGCTGTCACCCGCGCATCCAGCCTTACAC 1200
Db 2029827 CGGAGACATCAACCCATTAGCTCCACTACTGCTGTCACCCGCGCATCCAGCCTTACAC 2029886

Qy 1201 CGTCATGCAGCTCGTCGCGCCGGCTTGGATCCACCTGGTCCCAATCAGCGCAATCCC 1260
Db 2029887 CGTCATGCAGCTCGTCGCGCCGGCTTGGATCCACCTGGTCCCAATCAGCGCAATCCC 2029946

Qy 1261 ATGGGAATGCACCCGACCAGGACTGGCAACAGCCAACCTCAACTCTGATGTCACCGCAAA 1320
Db 2029947 ATGGGAATGCACCCGACCAGGACTGGCAACAGCCAACCTCAACTCTGATGTCACCGCAAA 2030006

Qy 1321 CCGCCGCATTGGATTGGTGTACCGTT CCTCTTCTCGGCCGAAGAGTT CGAACAGTT 1380
||| ||| ||| ||| ||| ||| |||
Db 2030007 CCGCCGCATTGGATTGGTGTACCGTT CCTCTTCTCGGCCGAAGAGTT CGAACAGTT 2030066
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Qy 1381 TGCACTCATTTGCAGCGCCTTCCAAGAAGCCGTCGGCTTGCTGCCTCAACTGGCAT 1440
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Db 2030067 TGCACTCATTTGCAGCGCCTTCCAAGAAGCCGTCGGCTTGCTGCCTCAACTGGCAT 2030126
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Qy 1441 CACCTTGAAGCAAAATGTCGCGGTAGCGCAGTAAGTTCTAGAGGTTTCCAGAGTCA 1500
||| ||| ||| ||| ||| ||| |||
Db 2030127 CACCTTGAAGCAAAATGTCGCGGTAGCGCAGTAAGTTCTAGAGGTTTCCAGAGTCA 2030186
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Qy 1501 GCTACAAGCAAAAGCCCTTCCATTGATGCACACCAACGTGAGATTCAAGGGAAAGGGC 1560
||| ||| ||| ||| ||| ||| |||
Db 2030187 GCTACAAGCAAAAGCCCTTCCATTGATGCACACCAACGTGAGATTCAAGGGAAAGGGC 2030246
||| ||| ||| ||| ||| ||| |||
Qy 1561 TTTATTGATTGCAGAATGCCTACTGCATTAGCGCGCTCCACCGGAATATTCACCACT 1620
||| ||| ||| ||| ||| ||| |||
Db 2030247 TTTATTGATTGCAGAATGCCTACTGCATTAGCGCGCTCCACCGGAATATTCACCACT 2030306
||| ||| ||| ||| ||| ||| |||
Qy 1621 GATCTGGCGGTAAATATGAACGGTAGACAGCATCATTACTGGCAGCACGATGATC 1675
||| ||| ||| ||| ||| ||| |||
Db 2030307 GATCTGGCGGTAAATATGAACGGTAGACAGCATCATTACTGGCAGCACGATGATC 2030361

; Sequence 2114, Application US/09738626
; Publication No. US20020197605A1
; GENERAL INFORMATION:
; APPLICANT: NAKAGAWA, SATOSHI
; APPLICANT: MIZOGUCHI, HIROSHI
; APPLICANT: ANDO, SEIKO
; APPLICANT: HAYASHI, MIKIRO
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; PRIOR APPLICATION NUMBER: JP 00/280988
; PRIOR FILING DATE: 2000-08-03
; NUMBER OF SEQ ID NOS: 7059
; SOFTWARE: PatentIn ver. 3.0
; SEQ ID NO 2114
; LENGTH: 981
; TYPE: DNA
; ORGANISM: Corynebacterium glutamicum

US-09-738-626-2114

Query Match 58.6%; Score 981; DB 10; Length 981;
Best Local Similarity 100.0%; Pred. No. 2.1e-311;
Matches 981; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy	491 ATGAGCAATAAAGAGTACCGGCCACACTGCCAGCTCGCACCTTGTCAACCATCGCA 550
Db	1 ATGAGCAATAAAGAGTACCGGCCACACTGCCAGCTCGCACCTTGTCAACCATCGCA 60
Qy	551 GAATGCAAGCACTTGGTACTGCTGCCACCAAGCTGTCCATTGCAGCCATCCCTCTCC 610
Db	61 GAATGCAAGCACTTGGTACTGCTGCCACCAAGCTGTCCATTGCAGCCATCCCTCTCC 120
Qy	611 CAGGCACTTGTCGCATTAGAACAGGCCTGGAGTTAGCTGATTGAACGCTCCACCGC 670
Db	121 CAGGCACTTGTCGCATTAGAACAGGCCTGGAGTTAGCTGATTGAACGCTCCACCGC 180
Qy	671 AAGGTCAATTGTCACCCCCAGCGGGCGAGAAAGTTGCTGCCATTGCCAAATCCACCGTGAC 730
Db	181 AAGGTCAATTGTCACCCCCAGCGGGCGAGAAAGTTGCTGCCATTGCCAAATCCACCGTGAC 240
Qy	731 CGGGCGGAGTCTTCCTCTCCCACGCCAAGGGCGCCAACGGTTCGCTCAGTGACCGTTG 790
Db	241 CGGGCGGAGTCTTCCTCTCCCACGCCAAGGGCGCCAACGGTTCGCTCAGTGACCGTTG 300

Qy	791	ACCGTAGGCATCATCCCCACGGCGGCTCCTACATTGCCGTCAATGCTGTCCATCGTG	850
Db	301	ACCGTAGGCATCATCCCCACGGCGGCTCCTACATTGCCGTCAATGCTGTCCATCGTG	360
Qy	851	GATGAAGAATATCCAGATCTGGAACCTCACATCGTCGAGGACCAAACCAAGCATCTTCTC	910
Db	361	GATGAAGAATATCCAGATCTGGAACCTCACATCGTCGAGGACCAAACCAAGCATCTTCTC	420
Qy	911	GCGTTGCTGCGCGACGGGCCATCGACGTCGCCATGATGGCCCTGCCTCTGAGGCACCA	970
Db	421	GCGTTGCTGCGCGACGGGCCATCGACGTCGCCATGATGGCCCTGCCTCTGAGGCACCA	480
Qy	971	GGCATGAAGGAAATCCCCCTACTACGACGAAGACTTTATCGTCGTTACAGCTAGCGATCAC	1030
Db	481	GGCATGAAGGAAATCCCCCTACTACGACGAAGACTTTATCGTCGTTACAGCTAGCGATCAC	540
Qy	1031	CCCTTCGCCGGGCCAAGACTTAGAACTATCCGCTTAGAAGACCTCGATCTGCTGCTT	1090
Db	541	CCCTTCGCCGGGCCAAGACTTAGAACTATCCGCTTAGAAGACCTCGATCTGCTGCTT	600
Qy	1091	CTCGACGACGGACACTGCCTCCACGACCAAATTGTGGACCTGTGCCGCCGGAGACATC	1150
Db	601	CTCGACGACGGACACTGCCTCCACGACCAAATTGTGGACCTGTGCCGCCGGAGACATC	660
Qy	1151	AACCCCATTAGCTCCACTACTGCTGTACCCGCGCATCCAGCCTTACCACCGTCATGCAG	1210
Db	661	AACCCCATTAGCTCCACTACTGCTGTACCCGCGCATCCAGCCTTACCACCGTCATGCAG	720
Qy	1211	CTCGTCGTCGCCGGCCTTGATCCACCTTGGTCCAATCAGCGCAATCCATGGGAATGC	1270
Db	721	CTCGTCGTCGCCGGCCTTGATCCACCTTGGTCCAATCAGCGCAATCCATGGGAATGC	780
Qy	1271	ACCCGACCAGGACTGGCAACAGCCAACCTCAACTCTGATGTACCGCAAACCGCCGATT	1330
Db	781	ACCCGACCAGGACTGGCAACAGCCAACCTCAACTCTGATGTACCGCAAACCGCCGATT	840
Qy	1331	GGATTGGTGTACCGTTCTCTTCTCGCGCCGAAGAGAGTTCGAACAGTTGCACTCATT	1390
Db	841	GGATTGGTGTACCGTTCTCTTCTCGCGCCGAAGAGAGTTCGAACAGTTGCACTCATT	900
Qy	1391	TTGCAGCGCGTTCCAAGAAGCCGTCGCGTTGCTGCCTCAACTGGCATCACCTGAAG	1450
Db	901	TTGCAGCGCGTTCCAAGAAGCCGTCGCGTTGCTGCCTCAACTGGCATCACCTGAAG	960
Qy	1451	AAAAATGTCGCGGTAGCGCAG	1471
Db	961	AAAAATGTCGCGGTAGCGCAG	981